



UPDATE: HYDROGEN/DUAL FUEL CONVERSION OF SNOW SWEEPERS

SWIFT Airfield Conference: Sept 22–25, 2025

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PROJECT

OVERVIEW

OBJECTIVE:

Retrofit two snow sweepers with the Guardian Hydrogen-Diesel System to decrease GHG emissions, improve fuel efficiency, and demonstrate hydrogen in heavy-duty off-road vehicles at an airport ecosystem.

TIMELINE:

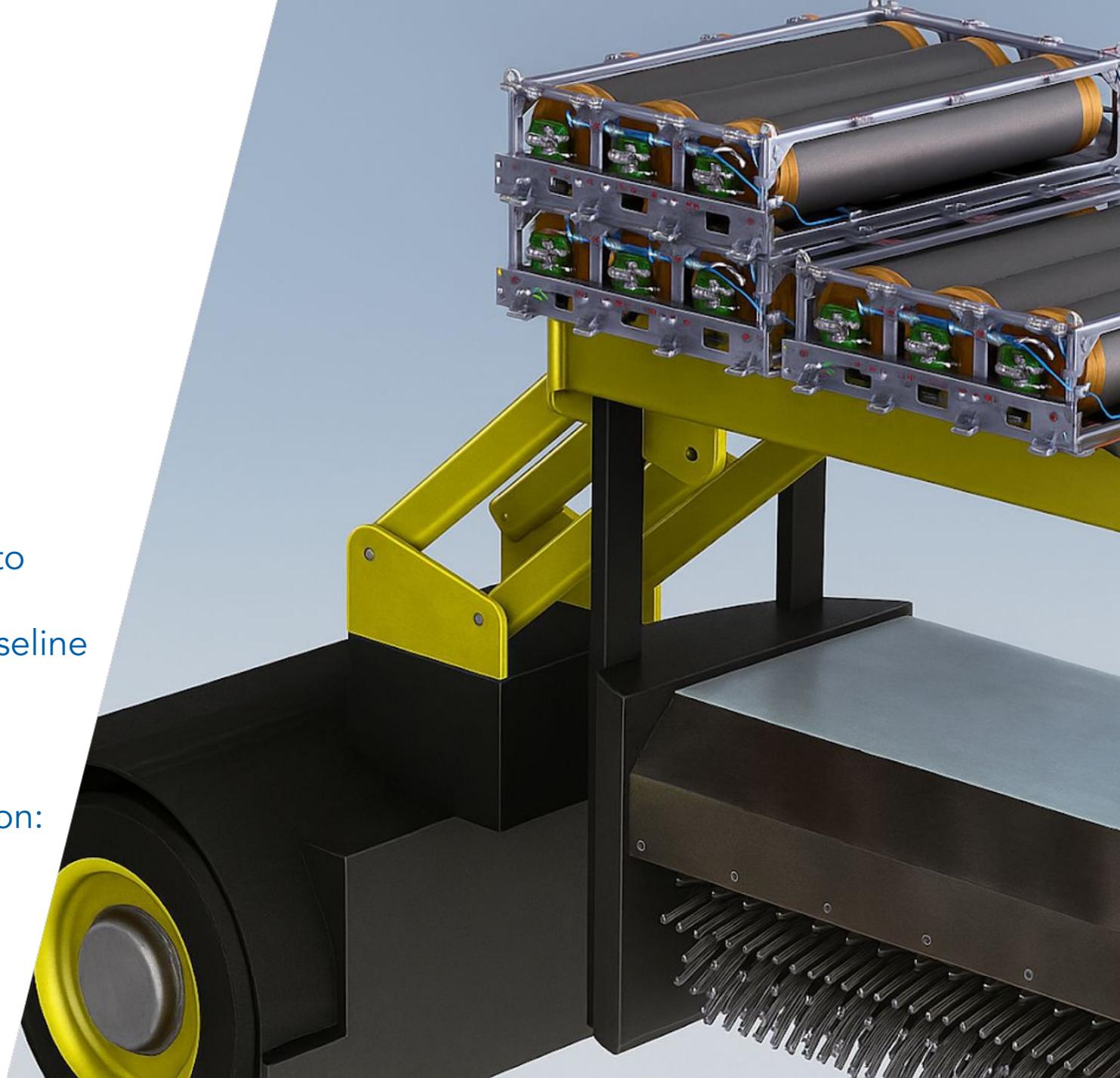
Approximately 13 months
(April 2025-May 2026)



PROGRESS TO DATE

MILESTONE 1:

- Secured project funding
- Secured Hydrogen supply at 350 bar
- Transported snow sweeper components to partner facility for retrofit
- Completed 3D scan of engine: digital baseline for integration
- Designed custom hydrogen tank bracket (structural + operational needs)
- Finalized hydrogen tank sizing and location: Tanks ordered
- Established technical support with snow sweeper OEMs



KEY LEARNINGS



1 **PERMITTING:** Retrofitting at YEG delayed by hydrogen storage permit needs, shifted first retrofit to partner facility

2 **ENGINEERING:** 3D scanning is essential to precision fit and reduced risk of redesign

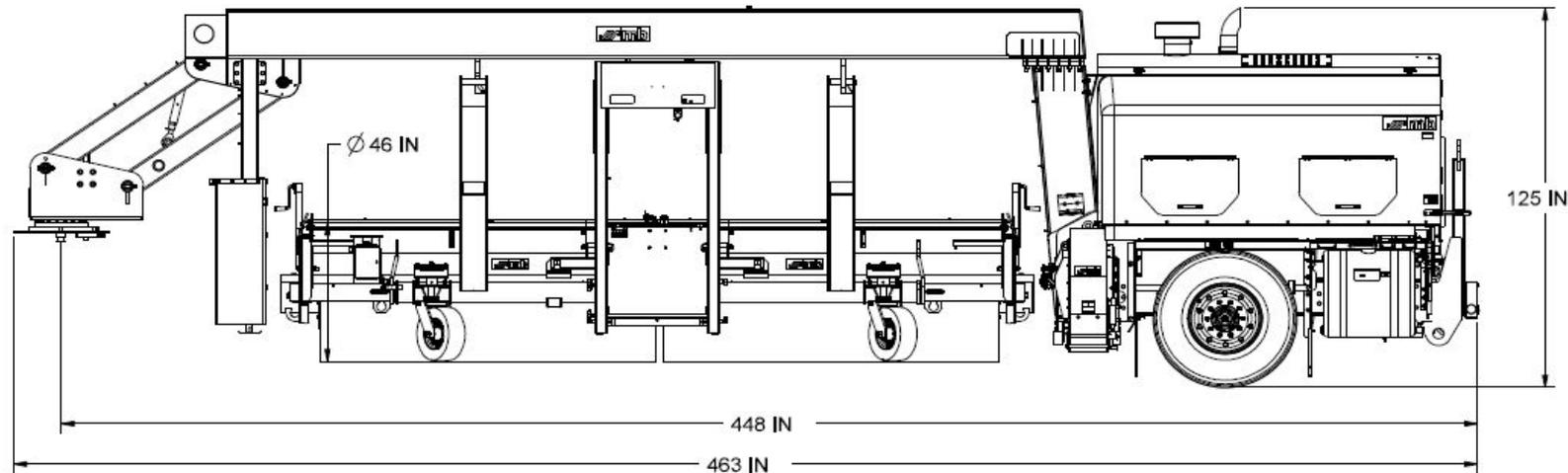
3 **SUPPLY CHAIN:** Early procurement of hydrogen tanks avoided schedule delays

4 **COLLABORATION:** Strong OEM engagement improved technical confidence



NEXT STEPS

1. Complete retrofit of first snow sweeper by Oct. 2025
2. Install hydrogen tanks at YEG facilities (with nitrogen purging for safety)
3. Provide training for YEG technicians (system operation & maintenance)
4. Transport second vehicle to partner facility for retrofit
5. Building assessment for hydrogen storage/servicing at YEG (ongoing activity)





Edmonton International Airport – CYEG

Other H2 Initiatives...

